

IFW/2616



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor application of

Docket No: Q95408

Junichi MATSUDA, et al.

Appln. No.: 10/582,369

Group Art Unit: 2616

Confirmation No.: 2817

Examiner: Not Yet Assigned

Filed: June 9, 2006

For: TRANSMISSION TIME DIFFERENCE MEASUREMENT METHOD AND SYSTEM


SUBMISSION OF INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

For the Examiner's convenience, enclosed herewith is a copy of the English translation of the International Preliminary Report on Patentability (IPRP). It is assumed that copies of the cited references as required by §371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned will undertake to provide them upon request.

Respectfully submitted,


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23373

CUSTOMER NUMBER

Date: December 4, 2006

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF TRANSMITTAL
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OF THE INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY
(CHAPTER I OR CHAPTER II
OF THE PATENT COOPERATION TREATY)
(PCT Rules 44bis.3(c) and 72.2)

To:

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Date of mailing (day/month/year) 08 September 2006 (08.09.2006)	
Applicant's or agent's file reference NEC04P277	IMPORTANT NOTIFICATION
International application No. PCT/JP2004/018052	International filing date (day/month/year) 03 December 2004 (03.12.2004)
Applicant NEC CORPORATION et al	

1. Transmittal of the translation to the applicant.

☐

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).

☒

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

2. Transmittal of the copy of the translation to the designated or elected Offices.

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

EP, KR

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3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Masashi Honda
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TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference NEC04P277	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2004/018052	International filing date (day/month/year) 03.12.2004	Priority date (day/month/year) 10.12.2003
International Patent Classification (IPC) or national classification and IPC H04Q7/34		
Applicant NEC CORPORATION		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.	
3. This report is also accompanied by ANNEXES, comprising:	
a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:	
<input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).	
<input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.	
b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4. This report contains indications relating to the following items:	
<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/018052

Box No. 1

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☐ the drawings:
- sheets _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/018052

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-46

YES

Claims

NO

Inventive step (IS)

Claims

YES

Claims 1-46

NO

Industrial applicability (IA)

Claims 1-46

YES

Claims

NO

2. Citations and explanations (Rule 70.7)

Document 1: WO 99/37037 A1 (QUALCOMM INC.), 22 July 1999,
page 7, line 4 to page 19, line 2

Document 2: WO 02/31989 A1 (QUALCOMM INC.), 18 April
2002, paragraphs [0036] to [0050]

Document 1 cited in the international search report discloses a system comprising a terminal, at least two base stations, and a control device for controlling said terminal and said base stations; therein, document 1 also presents the following formula (formula (12)):

$$"T_0' - T_0 = (RTD_1 + \Delta T - RTD_2) / 2."$$

Furthermore, in the light of formula (12) it is clearly possible to derive the time errors ($T_0' - T_0$) of the two base stations from the round trip delay between the mobile station and one of the base stations, the time difference between the times at which the mobile station receives the signals from the two base stations, and the round trip delay between the mobile station and the other base station.

Therefore, document 1 substantially discloses a system for measuring the transmission time difference,

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

said system comprising a terminal, at least two base stations, and a control device for controlling said terminal and said base stations, wherein each base station measures the round-trip propagation period of a signal that is transmitted between the base station itself and the terminal; the terminal measures the arrival time difference, which is the difference between the times at which the signals arrive from each of the base stations; and the control device determines the transmission time difference of the signals from each of the base stations based on the round-trip propagation period that was measured by each base station and the arrival time difference that was measured by the terminal, and then stores the calculated differences by means of a storage function.

Meanwhile, document 2 cited in the international search report discloses a terminal wherein a return period, which consists of the forward link WD110 hardware/processing delay (Δ_{wf}) and the reverse link WD110 hardware/processing delay (Δ_{wr}), exists between the reception of a signal transmitted by a base station and the transmission of said signal; therein, document 2 also indicates that the terminal determines the propagation period difference by using the signals from GPS satellites in order to determine the geographical location of the terminal, calculating the distances between the terminal and each of the base stations using the geographical position of each base station and the geographical position of the terminal as measured by the terminal itself, and then dividing the calculated distances by the electromagnetic constant.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/018052

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Claims 1 to 17 and 24 to 40

In terminals wherein a return period exists between the reception of a signal transmitted by a base station and the transmission of said signal, it is clearly impossible to determine the period that is necessary for the propagation of a signal between a base station and the terminal without subtracting said return period from the round trip propagation period that was measured by the base station. Therefore, it would have been easy for a person skilled in the art to conceive of subtracting the return period disclosed in document 2 from the round trip propagation period when measuring the difference between the transmission times in the invention disclosed in document 1.

In addition, it is obvious that the measured values must be reliable, and it is common technical knowledge that it is necessary to prescribe a lower limit for the measurement accuracy of the measurement functions, to prescribe a lower limit for the measurement frequency, and to prescribe a lower limit for the reception quality of the signals to be measured in order to ensure the reliability of the measured values.

Furthermore, it is apparent that the invention disclosed in document 1 measures the difference between the transmission times in cases when no value has been stored for the difference between the transmission times.

Consequently, the inventions set forth in claims 1 to 17 and 20 to 24 do not involve an inventive step in the light of document 1 and document 2.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2004/018052

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Claims 18 to 23 and 41 to 46

It would have been easy for a person skilled in the art to conceive of configuring so that the propagation time difference disclosed in document 2, which is calculated by using the signals from GPS satellites in order to determine the geographical location of the terminal, calculating the distance between the terminal and each of the base stations from the geographical position of each base station and the geographical position of the terminal as measured by the terminal itself, and then dividing the calculated distance by the electromagnetic constant, is used as the round trip propagation period in the invention disclosed in document 1.

Consequently, the inventions set forth in claims 18 to 23 and 41 to 46 do not involve an inventive step in the light of document 1 and document 2.